

Serial No. 10/037,588

Remarks

The Office Action of 05/17/2004 rejected claims 1 and 17 under 35 U.S.C. 112, first paragraph. Further, claims 1-5, 11, 17-19, 21, and 27-29 were rejected as being unpatentable under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,644,625 of E.L. Solot (hereafter referred to as Solot). Finally, claims 6-10, 12-16, 22-26, and 31 were rejected under 35 U.S.C. §103 as unpatentable over Solot in view of U.S. Patent No. 6,088,428 of D. Trandal, et. al (hereafter referred to as Trandal). No claims are being amended or cancelled.

Rejection of Claims 1 and 17 under 35 U.S.C. 112, first paragraph

This rejection is respectfully traversed.

The Office Action states:

Applicant's teaches that an automatic speech recognition unit includes a tone detector to perform detection of tones (page 17 line 12 - page 18 line 18) not specifically using 'speech recognition' analysis to perform the detection of tones. 'Speech recognition' is used specifically for recognizing and interpreting words, phrases, etc. in speech as described in applicant's specification (page 12 line 10 - page 13 line 18). Applicant's specification does not enable and disclose how using speech recognition analysis (e.g. Hidden Markov Model) is able to analyze tones, applicant's 'tone detector' within a speech recognition unit enables the analysis (page 17 line 12 - page 18 line 18).

Applicants' specification discloses three embodiments, FIGS. 2A-2C, and only FIG. 2C disclose a tone detector. The text cited in the Office Action is a description of FIG. 2C. The first sentence of the cited text on (page 17, line 12 - page 18, line 18) states "Consider now tone detector 203 of FIG. 2C." Clearly, this cited text is only directed to FIG. 2C and not the embodiments disclosed by FIGS. 2A and 2B.

Serial No. 10/037,588

With respect to the cited text on page 12, line 10 - page 13, line 18, the Examiner's remarks are based solely on the example given at the end of this cited text. This cited text clearly states "The output of filter 301 is communicated to automatic speech recognizer engine (ASRE) 302. ASRE 302 is responsive to the audio information and a template defining the type of operation which is received from templates block 306 and performs **phrase and tone spotting** so as to determine how the call has been terminated." emphasis added, page 12, lines 15-20. Clearly, the cited text (page 12, line 10 - page 13, line 18) does disclose using a automatic speech recognizer to perform tone spotting (tone detection).

With respect to Office Action statement of "Applicant's specification does not enable and disclose how using speech recognition analysis (e.g. Hidden Markov Model) is able to analyze tones...", please consider the following. Referring back to text cited by the Office Action on page 12, line 10 - page 13, line 1, the first two sentences of the paragraph, from which the cited text was taken, state "FIG. 3 illustrates, in block diagram form, greater details of ASR 207. FIGS. 8-11 give more details of ASR 207 in one embodiment of the invention." (Page 12, lines 10-12.) FIGS. 8-11 and accompanying text in the specification clearly illustrate that speech recognition analysis (e.g. Hidden Markov Model) is able to analyze tones. For example, blocks 807, 809, and 811 and accompanying text on page 24, lines 9-22, of the specification clearly show that tones are being detected using speech recognition analysis. Note that block 807 performs HMM analysis. Also, the detection of tones using speech recognition analysis is set forth for the third embodiment in FIGS. 12-15 and the text on page 27, line 4 through page 30, line 9. For example, the specification states "FIG. 12 illustrates, in flowchart form, the third embodiment of block 207. Since in the third embodiment speech and tones are processed in the same HMM analysis, there is no equivalent blocks for block 802, 804, 805, and 806 in FIG. 12." (See page 27, lines

Serial No. 10/037,588

4-8.) If the Examiner still believes that the cited text does disclose detecting a tone using automatic speech recognition, applicants would deeply appreciate an explanation of how the Examiner derives this teaching from the cited text.

In summary, applicants submit that the specification complies with 35 U.S.C. §112, first paragraph so as to provide support for claims 1 and 17.

Rejection of Claims 1-5 under 35 U.S.C. 102(b)

Claim 1 recites:

receiving audio information from the destination endpoint;
analyzing using automatic speech recognition the received audio information for a first type of classification;

analyzing using automatic speech recognition the received audio information for a second type of classification wherein the second type of classification is for a presence of tones in the audio information; and

determining a call classification for the destination endpoint in response to the analysis of the first type of classification and the analysis of the second type of classification.

The Examiner states that "Solot teaches ... analyzing using automatic speech recognition the received audio information for a first and second type of classification wherein the second type is for detecting tones (col. 5 lines 31-62)...." The cited text from Solot states:

The inventive apparatus recognizes the standard intercept tone by well known techniques which isolate the intercept tone from other audio signals and to determine the presence or absence of the intercept tone. The telephone company when a telephone number is changed, disconnected or other such happening that will not allow the call to be completed will intercept the incoming call and present a recorded voice message back to the caller stating why the call cannot be completed--this is the intercept message and is preceded by a tone or group of tones. When the tone or tones is received the present system will record the voice intercept message.

The present system analyzes the voice message via the voice recognition board (FIG. 1, item 13). The software and the hardware that analyzes the voice is capable of providing a confidence level associated with the decoding of the voice

Serial No. 10/037,588

message. A threshold 109 is provided such that when the confidence level meets or exceeds the threshold the message contents are processed for a change in telephone number 111. The confidence level is built into the software supplied with the Voice Recognition board. This software determines what the utterance is and supplies a number from zero to 99 to indicate confidence in the utterance being properly determined. The system software will decide what level is suitable for acceptance depending on the errors encountered in a real world environment. If a new telephone number is provided the call may be placed to the new number 115 or a prompt to the caller informing 117 the caller of the new number. If the caller does not want to call the new number the system reverts back to the start 100. Otherwise, if the caller wishes, the new number is dialed and the state reverts to state 102.

The cited text clearly does not state that the tones are detected using automatic speech recognition; rather, the cited text states "The inventive apparatus recognizes the standard intercept tone by well known techniques which isolate the intercept tone from other audio signals and to determine the presence or absence of the intercept tone." There is no indication that these well known techniques include using automatic speech recognition which could not be known except from applicants' patent application. Clearly, Solot discloses determining that an intercept tone has been received using conventional tone detection techniques, recording the voice message, and analyzing the recorded voice message to determine the new telephone number and not to determine the presence of a tone. These are not the steps recited in claim 1.

In summary, Solot does not anticipate claim 1 under 35 U.S.C. 102(b). Claims 2-5 are directly or indirectly dependent from claim 1 and are patentable for at least the same reasons as claim 1.

Rejection of Claim 11 under 35 U.S.C. 102(b)

Claim 11 is patentable under 35 U.S.C. 102(b) for the same reasons as claim 1.

Serial No. 10/037,588

Rejection of Claims 17-21 under 35 U.S.C. 102(b)

Amended claims 17 and 21 and original claims 18 and 19 are patentable under 35 U.S.C. 102(b) for the same reasons as claim 1 and original claims 2-5.

Rejection of Claims 27-30 under 35 U.S.C. 102(b)

Claim 27 is patentable under 35 U.S.C. 102(b) for reasons similar to those set forth for claim 1. Claims 28, 29, and 31 are directly or indirectly dependent on claim 27 and are patentable for at least the same reasons.

Rejection of Claims 6-10 under 35 U.S.C. 103(a)

Claims 6-10 are directly or indirectly dependent on claim 1 and are patentable for at least the same reason as claim 1. Claim 1 is also patentable under 35 U.S.C. 103(a) over Solot in view of Trandal. The Examiner states that "Trandal discloses using a Hidden Markov Model to determine the presence of words and/or tone in audio information (col. 8 lines 16-25 and col. 23 lines 17-28)". Trandal does disclose using a Hidden Markov Model to determine the presence of words but not to determine the presence of tones. Cited text at col. 8, lines 16-25 states:

Over a frame duration, the DSP processes the signals represented by the received frames and transmit frames, for each channel of activity, as directed by DSP software in the program store. The DSP can perform several different types of processing including speech encoding and decoding, companding, tone detection and generation, speech recognition, text-to-speech conversion, etc. All require DSP processing or computation. Thus, the frame duration determines the maximum total number of computations possible per frame of transmit and receive data.

The cited text clearly does not state that the tone detection is being performed using any type of speech recognition but rather that tone detection is just one of a number of operations that the DSP can perform.

The cited text at col. 23, lines 17-28 states:

Serial No. 10/037,588

If no DTMF digits are detected then state 548 is entered to process a voice utterance by the subscriber. As described in detail below, the DSP generates a hidden Markov model template for the utterance and compares the input template to the subscriber's stored template which was generated in the enrollment mode described above. In one preferred embodiment the DSP is also provided with means, in a subroutine of a stored program, to provide a subscriber with access to a mailbox extension. If extension service is enabled then control is passed on branch 552 to state 720 (not shown in detail) to process access to a mailbox extension.

Clearly, the cited text has no disclosure or suggestion of using any type of speech recognition technique to determine tones. Claim 1 is patentable under 35 U.S.C. 103(a) over Solot in view of Trandal.

Rejection of Claims 12-16 under 35 U.S.C. 103(a)

Claims 12-16 are patentable under 35 U.S.C. 103(a) over Solot in view of Trandal for similar reasons as those set forth for claim 6-10.

Rejection of Claims 22-26 under 35 U.S.C. 103(a)

Claims 22-26 are patentable under 35 U.S.C. 103(a) over Solot in view of Trandal for similar reasons as those set forth for claim 6-10.

Rejection of Claim 31 under 35 U.S.C. 103(a)

Claim 27 is patentable under 35 U.S.C. 103(a) over Solot in view of Trandal for similar reasons as those set forth for claim 1. Claim 31 is directly dependent on claim 27 and is patentable for least the same reasons.

Summary

In view of the foregoing, applicants respectfully request reconsideration of claims 1-19, 21- 29, and 31 as presently in the application, and allowance of these claims.

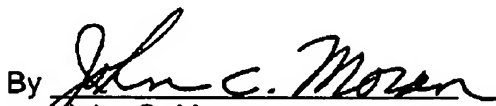
Although the foregoing is believed to be dispositive of the issues in the application, if the Examiner believes that a telephone

Serial No. 10/037,588

interview would advance the prosecution, the Examiner is invited to call applicants' attorney at the telephone number listed below.

Respectfully,

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